

**Clean Harbors Kansas, LLC
RCRA Permit Application
Section E
Tank Systems
Appendix E-A - Tank System Assessments and Certifications**

Attachment 2, Tank Containment Certification Statements

Throughout this Attachment, the facility referred
to as "Clean Harbors Kansas, LLC" is the same facility
identified in the permit application as "Clean Harbors Kansas, LLC."

**September 24, 2011
Revision No. 15**

HRIW
SECONDARY CONTAINMENT CALCULATIONS

PROCESS AREA

P100 and P200 are interconnected and are considered one secondary containment area.

Process Area P100

Volume Provided

Area P100	31.71' x 69.67' x 1'	=	2,209.24 ft ³
Truck Ramps	(1/2 x 29.83' x 15' x 1') x 2	=	447.45 ft ³
Sump Area	10' x 15.50' x 1'	=	<u>155.00 ft³</u>
Total Gross Volume		=	2,811.69 ft ³
			<u>x 7.48 gal/ft³</u>
Total Volume		=	21,031.44 gal

Process Area P200

Volume Provided

Area P200	33.96' x 69.67' x 1'	=	2,365.99 ft ³
West Ramp	(1/2 x 7.83' x 8.83' x 1') + (0.67' x 8.83' x 1')	=	40.49 ft ³
South Berm Opening	10' x 1' x 1'	=	<u>10.00 ft³</u>
Total Gross Volume		=	2,416.48 ft ³
		=	<u>x 7.48 gal/ft³</u>
Total Volume		=	18,075.27 gal

Rainfall requirements

Area to Receive Rain (Worst Case)

Note: Area P100 and P200 are covered with a building. To estimate the worst case scenario of rain infiltration, we have calculated the rain of a 24 hour 25 year event coming in on the south and west sides at a 60 degree angle from horizontal. The open area on these two sides is 16.18' ($x = 16.18' / \tan 60^\circ = 9.34'$)

South Side	9.34' x 69.67'	=	650.72 ft ²
West Side	9.34' x 82.17'	=	<u>767.47 ft²</u>
		=	1,418.19 ft ²
Rainfall	6.15" x 1'/12"	=	<u>x 0.51 ft</u>
Total Gross Volume of rain infiltration		=	723.28 ft ³
		=	<u>x 7.48 gal/ft³</u>
Total Required for Rainfall		=	5,410.11 gal

Summary

Volume Provided

P100	=	22,031.44 gal
P200	=	<u>18,075.27 gal</u>
Total Gross Volume Provided	=	40,106.71 gal

Minus Storage Drums

Area P100: 88 drums single stacked on ramps.

$$\begin{aligned} &0.5 \times 88 \text{ dr} \times 3.14 \times (1')^2 \\ &\times 1' \times 7.48 \text{ gal/ft}^3 = 1,033.44 \text{ gal} \end{aligned}$$

Minus Storage Drums

Area P200: 92 drums double stacked, (46 on floor level).

$$\begin{aligned} &46 \text{ dr} \times 3.14 \times (1')^2 \times \\ &1' \times 7.48 \text{ gal/ft}^3 = 1,080.41 \text{ gal} \end{aligned}$$

Rainfall Requirements	=	<u>5,410.13 gal</u>
Total Gross Volume	=	7,523.98 gal
Total Net Volume Provided		
40,106.71 gal - 7,523.98 gal	=	32,582.73 gal

Capacity Required

The largest tank volume or 10% of the total volume

Total Maximum Tank Volume Area P100	=	86,211.00 gal
Total Maximum Tank Volume Area P200	=	1,155.00 gal
Total Container Volume 180 Drums	=	<u>9,900.00 gal</u>

Total Required Capacity	=	97,266.00 gal
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10% of Total Capacity	=	9,726.60 gal
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or		
Largest Tank Volume	V-5	= 20,895.00 gal (controls)

Total Capacity Required	=	20,895.00 gal
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Total Capacity Provided	=	32,582.73 gal
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Net Difference

32,582.73 gal - 20,895.00 gal	=	11,687.73 gal
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H. Douglas Steadman



Aug. 20, 1992

COMPATIBILITY OF WASTE WITH TANK MATERIALS

Tank 1

Tank Material - A36 Steel

Service: Wastewater

Wastewater contaminated with solvents such as oil, ethanol, heptane, hexane, xylene, toluene, trichloroethane, perchloroethylene, methyl ethyl ketone, methyl isobutyl ketone, acetone, and stoddard solvent.

May also be used for kiln fuel wastes which include water and solvents such as oil, ethanol, heptane, hexane, xylene, toluene, trichloroethane, perchloroethylene, methyl ethyl ketone, methyl isobutyl ketone, acetone, and stoddard solvent.

Hazardous Characteristics of Waste: Ignitability, toxicity, and reactivity.

Tank Inspection Results:

Tank thicknesses were measured and were found to have acceptable decreases in thickness due to corrosion or incompatibility. (See individual tank data sheets and historical test results).

Compatibility Data:
(Published data for applicable solvents)

The compatibility charts contained in Corrosion Data Survey, 6th Edition, published by the National Association of Corrosion Engineers show that the average penetration rates for acetone, methyl ethyl ketone, methyl, isobutyl ketone, perchloroethylene, trichloroethane, trichloroethylene and xylene on steel to be less than .020 inches per year.

Table 23-2 from Perry's Chemical Engineers Handbook shows that the corrosion rate of ethanol and methanol on steel are less than .02 inches per year.

Control of Hazardous Characteristics:

Tank is closed to prevent physical contact with the waste or its vapors and to prevent sources of ignition from contacting the waste. The tank is constructed of nonflammable material, (steel). Tank is vented through a demister to atmosphere.

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Attachment 3, Compatibilities of Wastes with Tank Materials

**September 24, 2011
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COMPATIBILITY OF WASTE WITH TANK MATERIALS

Deleted

Tanks 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14 and 17

Tank Material - A36 Steel

Service: Waste Solvents and Water

The waste solvents may include diesel, oil, ethanol, heptane, hexane, xylene, toluene, trichloroethane, perchloroethylene, methyl ethyl ketone, methyl isobutyl ketone, acetone, stoddard solvent, and dioxane.

Hazardous Characteristics of Waste: Ignitability, toxicity, and reactivity.

Tank Inspection Results:

Tank thicknesses were measured and were found to have acceptable decreases in thickness due to corrosion or incompatibility. (See individual tank data sheets and historical test results).

Compatibility Data:

(Published data for applicable solvents)

The compatibility charts contained in Corrosion Data Survey, 6th Edition, published by the National Association of Corrosion Engineers show that the average penetration rates for acetone, methyl ethyl ketone, methyl, isobutyl ketone, perchloroethylene, trichloroethane, trichloroethylene and xylene on steel to be less than .020 inches per year.

Table 23-2 from Perry's Chemical Engineers Handbook shows that the corrosion rate of ethanol and methanol on steel are less than .02 inches per year.

Control of Hazardous Characteristics:

Tank is closed to prevent physical contact with the waste or its vapors and to prevent sources of ignition from contacting the waste. The tank is constructed of nonflammable material, (steel). Tank is vented through a demister to atmosphere.

TANK CERTIFICATION FOR 01

EXTENSION DEVICES

DATE: 7/25/91 - 2ND VISIT

TANK CERTIFICATION FOR V6

DATE: 7/26/91 - 2ND VISIT

EXTERIOR REVIEW

PAINT- BOT LIGHT FLAKING ON SOUTH END TOP OK
SIDES OK
STRUCTURE- SHRINKAGE CRACK COMES OFF THE PIPE TROUGH
SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK
PICTURES- FIRST VISIT

FOUNDATION REVIEW

SHRINKAGE CRACK COMES OFF THE NORTH END
OF PIPE TROUGH BUT IS NOT DUE TO FOUNDATION
SETTLEMENT OR FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>	
INLET-	7/25	5:00P	29.5	NOT OK
	7/26	8:30A	29.5 PSI	
OUTLET-	7/25	11:00A	29.5 PSI	NOT OK
		1:45P - 3:45P	29.5	OK
SUPPORTS-	OK			

CONTAINMENT

SEE SEPARATE SHEET

TANK CERTIFICATION FOR V7

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- BOT OK
SIDES OK

TOP OK

STRUCTURE- NO SIGNS OF DISTRESS OR WELD FAILURE

SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK

PICTURES- FIRST VISIT

FOUNDATION REVIEW NO SIGNS OF FOUNDATION SETTLEMENT,
CRACKING OR FAILURE

PIPE TESTING

	<u>Date</u>	<u>Time</u>	<u>Pressure</u>	
TANK	7/25	2:50-5:00P	14PSI	OK
INLET-	7/25	5:10P-7:00P	30PSI	OK
OUTLET-	7/25	1:45P-3:45P	30.75PSI	OK
SUPPORTS-	OK			

CONTAINMENT SEE SEPARATE SHEET

TANK CERTIFICATION FOR U8

DATE: 7/25/91 2ND VISIT

EXTERIOR REVIEW

PAINT- BOT - MINOR FLAKING TOP OK
SIDES - OK

STRUCTURE- NO SIGNS OF DISTRESS OR WELD FAILURES

SHELL THICKNESSES- 7/89 TO 11/90 CORROSION RATES OK

PICTURES- FIRST VISIT

FOUNDATION REVIEW

NO SIGNS OF FOUNDATION SETTLEMENT, CRACKING
OR FAILURE

PIPE TESTING

	Date	Time	Pressure	
TANK	7/25	11:45-5:00 P	14 PSI	OK
INLET-	7/25	6:00 P-7:00	30 PSI	OK
OUTLET-	7/25/91	11:00 A	30 PSI	OK

SUPPORTS-

END SUPPORT FOR PIPES REQUIRED 7/25/91
DONE & COMPLETE 9/5/91

CONTAINMENT

SEE SEPARATE SHEET

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Attachment 5, Examples of Containment Coatings

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CHEMICAL RESISTANCE GUIDE

This guide is intended as an aid in determining the potential usefulness of SEMSTONE 245 as a protective barrier against chemical exposure. Each application should be evaluated according to its particular circumstances and conditions.

- KEY: 1 = Suitable for constant immersion
 2 = Suitable for shorter term containment and continual spillage
 3 = Suitable for intermittent spills when followed promptly with water flushing
 NR = Not recommended
 C = Consult Sentry Polymers
 * = This chemical will attack the silica aggregate in the system. When the system is applied, be especially careful that all aggregate is totally encapsulated with SEMSTONE 245.
 ** = For constant immersion service, coating must be postcured 12 hours at 150°F.
 *** = Coating may show some staining or color change when exposed to this chemical.

	RATING		RATING		RATING
Acetic Acid, 10%	1	Cyclohexane	2	Naphthalene	1
Acetic Acid, 30%	2	Cyclohexanol	2	Nitric Acid, 5%	2***
Acetic Acid, Glacial	3	Cyclohexanone	2	Nitric Acid, 30%	3***
Acetone	1	Diesel Fuel	1	Nitric Acid, 50%	NR
Acrylic Acid, up to 25 %	2	Diethyl Benzene	1	Nitrobenzene	1
Acrylonitrile	2	Dimethyl Aniline	1	n-Octyl Alcohol	1
Adipic Acid	2	Epichlorohydrin	1	Oils	1
Alum (Aluminum Potassium Sulfate)	1	Ethyl Acetate	1	Oleic Acid	2
Aluminum Chloride	1	Ethyl Acrylate	1	Oleum	2***
Aluminum Fluoride	1*	Ethyl Alcohol	1	Oxalic Acid	2
Aluminum Hydroxide	1	Ethyl Benzene	1	Perchloroethylene	1
Aluminum Nitrate	1	Ethyl Chloride	1**	Perchloric Acid	2
Aluminum Sulfate	1	Ethylene Dichloride (EDC)	1**	Phenol	2
Ammonia	2	Ethylene Glycol	1	Phosphoric Acid, 50%	1
Ammonium Bisulfite	1	Fatty Acids	1	Phosphoric Acid, 85%	1
Ammonium Chloride	1	Ferric Chloride	1***	Phosphorous Acid	2
Ammonium Hydroxide	1	Ferric Nitrate	1	Potassium Carbonate	1
Ammonium Nitrate	1	Ferric Sulfate	1	Potassium Chloride	1
Ammonium Sulfate	1	Ferrous Chloride	1	Potassium Dichromate	2
n-Amyl Alcohol	1	Fluosilicic Acid	1*	Potassium Hydroxide	1
Aniline	1	Formaldehyde	1	Potassium Nitrate	1
Barium Chloride	1	Formic Acid	2	Propionic Acid	2
Barium Hydroxide	1	Fuel Oil	1	Silver Nitrate	1***
Barium Sulfate	1	Gasoline	1	Skylrol	1
Barium Sulfide	1	Glycerine	1	Sodium Acetate	1
Benzene	1	Heptane	1	Sodium Bicarbonate	1
Benzene Sulfonic Acid	1	Hexane	1	Sodium Bisulfate	1
Benzoic Acid	1	Hydrobromic Acid	2	Sodium Bisulfite	1
Black Liquor, Pulp Mill	1	Hydrochloric Acid, 15%	1	Sodium Carbonate	1
Bleach	C	Hydrochloric Acid, 37%	1***	Sodium Chloride	1
Boric Acid	1	Hydrofluoric Acid	1*	Sodium Chlorite	2
Brine	1	Hydrogen Peroxide	2	Sodium Hydroxide, 10%	1
Bromide, Liquid	NR	Hydrogen Sulfide	1	Sodium Hydroxide, 50%	1
Bromide Gas (Dry & Wet)	3	Isopropyl Alcohol	1	Sodium Hypochlorite	C
Butyl Acetate	1	Jet Fuel	1	Sodium Sulfate	1
Butyl Acrylate	1	Kerosene	1	Sodium Sulfide	1
n-Butyl Alcohol	1	Lactic Acid	2	Stannic Chloride	1
Butyl Cellosolve Solvent	1	Lauryl Chloride	1	Stannous Chloride	1
n-Butyric Acid	2	Lead Acetate	1	Stearic Acid	1
Cadmium Chloride	1	Linseed Oil	1	Styrene	1
Calcium Chloride	1	Lithium Bromide	1	Sugar/Sucrose	1
Calcium Hydroxide	1	Lithium Chloride	1	Sulfur Dioxide	1
Calcium Hypochlorite	C	Lithium Hypochlorite	C	Sulfuric Acid, 10%	1
Calcium Nitrate	1	Lithium Hydroxide	1	Sulfuric Acid, 50%	1
Calcium Sulfate	1	Magnesium Bisulfite	1	Sulfuric Acid, 98%	1***
Calcium Sulfite	1	Magnesium Carbonate	1	Tall Oil	1
Carbon Dioxide Gas	1	Magnesium Chloride	1	Tannic Acid	1
Carbon Disulfide	2	Magnesium Hydroxide	1	Tartaric Acid	1
Carbon Tetrachloride	1**	Magnesium Sulfate	1	Tetrahydrofuran	3
Chlorine Dioxide	2	Maleic Acid	2	Toluene	1
Chlorine Gas (Dry & Wet)	3	Mercuric Chloride	1	Toluene Sulfonic Acid	1
Chlorine Water	2	Mercurous Chloride	1	Trichloroacetic Acid	2
Chlorobenzene	1	Methanol	1	Trichloroethane	1
Chloroform	1**	Methyl Chloride	2	Trichloroethylene	1**
Chromic Acid, 25%	1***	Methylene Chloride	1**	Trisodium Phosphate	1
Chromic Acid, 50%	2***	Methyl Ethyl Ketone	1	Urea	1
Copper Nitrate	1	Methyl Methacrylate	1	Water, Deionized	1
Copper Sulfate	1	Mineral Spirits	1	Water, Demineralized	1
Corn Oil	1	Monochloroacetic Acid	2	Water, Distilled	1
Crude Oil, Sour	1	Monoethanolamine	1	Xylene	1
Crude Oil, Sweet	1	Muriatic Acid	1	Zinc Chloride	1
Cupnc Ammonium Chloride	1	Naphtha	1	Zinc Sulfate	1

SURFACE PREPARATION OF STEEL (NON-IMMERSION SERVICE ONLY)

1. Abrasive blast steel surfaces to a near white metal finish with 1 - 2 mil anchor profile.
(Ref. SSPC-SP-10)
2. All outside corners must be ground smooth and rounded.
3. Round all inside corners to a minimum 1/2" radius with SEMSTONE 500 Epoxy Putty.

MASKING

Mask surfaces that are not to be coated. This material is difficult to remove, once applied.

APPLICATION EQUIPMENT

1. For spraying, use only a specially equipped plural component rig. Specifications are as follows:

Graco King Hydracat (or equivalent); 28:1 pump; 2.3 GPM, 4:1 mix ratio; inlet air pressure on pump set at 75-120 psi.

Two 15 gallon heated hopper tanks. Set heater at 95°F.

In-line heater on resin outlet, set at 110° F.

High pressure solvent pump.

Insulated hoses, 3/8 in. ID, maximum length of 100 ft.

Graco Silver Gun, or equivalent, equipped with a reversible, self-cleaning tip, orifice size .035 - .041 inches.

No filters or internal screens.

2. For manual applications:

- a. Floors - preferred method is to spread with serrated squeegee, then backroll.

As a second choice, trowel or brush could be used.

- b. Walls - use roller or brush.

MIXING AND APPLICATION

1. The components must be individually agitated immediately prior to use:

Part A - Blend each Part A component to a uniform consistency in its individual container, using a Jiffy type mixer.

Part B - Stir each Part B component to a uniform color in its individual container.

2. For work on vertical surfaces, add Part C.

Part C comes in premeasured bags.

For a one gallon unit and three gallon units, add one premeasured bag to each Part A.

For 25 gallon units, add one premeasured bag to each bucket of Part A and each bucket of Part B. (NOTE - There are 4 buckets of Part A and one bucket of Part B in a 25-gallon unit.)

Using a Jiffy type mixer, blend the Part C in until it is evenly dispersed, (about 1 - 2 minutes).

NOTE: Adding Part C darkens the color of SEMSTONE 245 somewhat.

3. Skip this step if you are spraying.

If mixing for application by hand:

Pour Part A into a clean mixing container of adequate capacity.

Add Part B.

Mix thoroughly for two minutes using a Jiffy type mixer.

The pot life of the mixed material will be about 15 minutes at 80°F. So, use immediately. For work on floors, etc., we suggest that you immediately dump the mixed material onto the surface and spread it.

NOTE: The premeasured quantities of each component have been carefully set. Any variation in these premeasured ratios will adversely effect performance. So, mix only complete units. If any of the components are spilled, discard the batch.

Material should be applied in even coats.

If spraying, use multidirectional passes to insure positive coverage and a proper film build.

If you notice a marbling or streaking effect while spraying, stop immediately. The spray equipment is not mixing the material properly or the mix ratios are incorrect. Check your equipment.

This marbled or streaked material will not cure properly and must be removed. Scrape the material off and then solvent wash the area with MEK or toluene. Alternately, abrasive blasting may be used to remove the material. In either case the end result is to have a non-sticky surface to recoat.

5. Adding aggregate:

a. Horizontal surfaces

To obtain a thicker coating and/or a nonskid finish, aggregate may be broadcast into the coating before it begins to set.

Since SEMSTONE 245 sets quickly, you must plan the work carefully. One worker should apply the coating, and another should follow immediately, broadcasting the aggregate. However, keep the work separated. Do not allow aggregate to be broadcast ahead of the applicator.

Broadcast aggregate until dry layer is achieved.

Allow the coating to cure.

Remove the excess aggregate.

Use only clean, dry, bagged and well graded 20/40 mesh silica or quartz sand containing not less than 97.5% silicon dioxide. Aggregate may be either round or angular.

When broadcasting aggregate in a large or congested area, it may be desirable for workers to wear spiked shoes to enable them to walk out onto the coating without disturbing it.

An optional topcoat of SEMSTONE 245 may be applied to protect the aggregate and obtain a more cleanable surface. The topcoat should be of neat material applied at a cover rate of 150 - 160 sq. ft. per gallon. The surface must be

kept dry and free of contamination prior to applying this topcoat.

b. Vertical surfaces

Refer to Sentry's supplemental guidelines for adding Part C and sand.

6. Prepare surfaces for intercoat adhesion as follows:

a. Allow SEMSTONE 245 to cure until jelled before recoating.

b. If the surface has cured firm to the touch, but less than 24 hours, it must be washed with soap and water, rinsed and dried before recoating.

c. Surfaces cured beyond 24 hours must be washed with soap and water, rinsed, dried and lightly sanded or abrasive blasted.

d. Important: While SEMSTONE 245 can be applied over damp concrete, for recoating, the surface must be dry.

7. Post-curing for immersion service in chlorinated solvents:

The coating must be postcured if it will be used for continuous immersion service in chlorinated solvents.

Tarp the coated area and heat it at 150°F for at least 12 hours.

8. Spark Testing Steel

Spark testing is recommended for coated steel in immersion service.

Voltage setting = $1250 \times \sqrt{\text{Coating Thickness}}$
(in mils)

9. If work is interrupted, and at the end of the day, terminate the coating in a straight line.

CLEANUP

Clean all tools and equipment with Xylene, MEK or toluene.

SAFETY PRECAUTIONS

FOR INDUSTRIAL USE ONLY.

Both the mixed product and its separate A and B components can be extremely irritating to skin, eyes and the respiratory system.

Avoid contact with eyes and skin; do not ingest or inhale.

When spraying in a confined area, wear a fresh air hood and make provision for forced ventilation.

At all other times, wear a NIOSH approved respirator suitable for organic vapors when working with this product or its components.

When working with SEMSTONE 245, always wear chemical goggles, rubber gloves, and appropriate work clothing.

Prolonged or repeated exposure to the unreacted Part A and Part B components of SEMSTONE 245 may cause skin irritation or allergic reactions.

Refer to material safety data sheets regarding individual components.

NOTES:

NOTICE TO CUSTOMERS

We believe the information in this technical bulletin to be accurate; it is offered in good faith for your benefit. However, no guarantee of its accuracy is given or implied. Since the conditions of use are beyond our control, we suggest you make your own evaluation of these recommendations and suggestions. We guarantee our products to conform to our manufacturing standards. We assume no responsibility for coverage, performance or injuries resulting from use. Liability, if any, is limited to replacement of our products.



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-SILOXIRANE®-C2033-

AMBIENT CURE PROTECTIVE LINING FOR CEMENT CONTAINMENT AREAS, DIKES, FLOORS, PITS, ETC. HANDLING SOLVENTS, ACIDS, CAUSTICS

DISCRIPTION

Siloxirane C-2033 is a two component ambient cure coating with outstanding corrosion resistance. It is a cross linked organic/inorganic thermoset polymer capable of resisting sulphuric acid, hydrochloric acid, nitric acid, glacial acetic acid, methylene chloride, methanol, acetone, caustics and hypochlorites.

APPLICATION

Siloxirane C-2033 can be applied by spray, brush or roller. For areas of heavy traffic, use Siloxirane C-2033 Non-Slip as the second coat.

Cure Time:	Foot traffic	12 hours
@ 75°F (24°C)	Vehicle traffic	24 hours
	Chemical service	72 hours

SUMMARY OF BENEFITS

- Broad range of chemical resistance
- Steam cleanable
- Unique temperature span: -80°F to +200°F
- Non-absorbent
- Maintains a tough, hard surface
- Easily patched by maintenance personnel
- Outstanding abrasion wear resistance
- Excellent adhesion, even with flexing

AREAS OF USAGE

- Solvent containment pits and dikes
- Waste water pits
- Waste acid pits
- Acid troughs
- Oil and gasoline containment areas
- Gasohol containment areas
- Acid tank containment dikes
- Corrosion resistant flooring
- Tank coatings
- Coating of steel structures

TYPICAL PROPERTIES

- Finish: Oyster White
Can be colored as required
- Weight per Gallon: 11.0 lbs.
- V.O.C. Level: 0.85 lbs. per gallon
96.0 grms per liter
- Lead Content: Zero
- Kit Size: 3 Gallons C2001 Resin
40.0 Ounces C2033 Catalyst
C2033 Catalyst
- Activator: 120 minutes at 80°F and
50% rel. hum. (1 lb.)
45-60 minutes (3 gals.)
- Pot Life: 300-500 Centistrokes
- Viscosity: 53°C
- Flash Point: 87.4%
- Solids by Volume: 94.0%
- Solids by Weight: Zero
- Chromate Content: 1360 sq. ft. per
gal. at 1 mil DFT
- Theoretical Coverage: 18-20 mils dry
20-21 mils wet
- Recommended DFT: One year minimum when
stored at 50-90°F
- Shelf Life:



ADVANCED
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—SILOXIRANE®—C2033—

Performance and Economical Excellence

PERFORMANCE

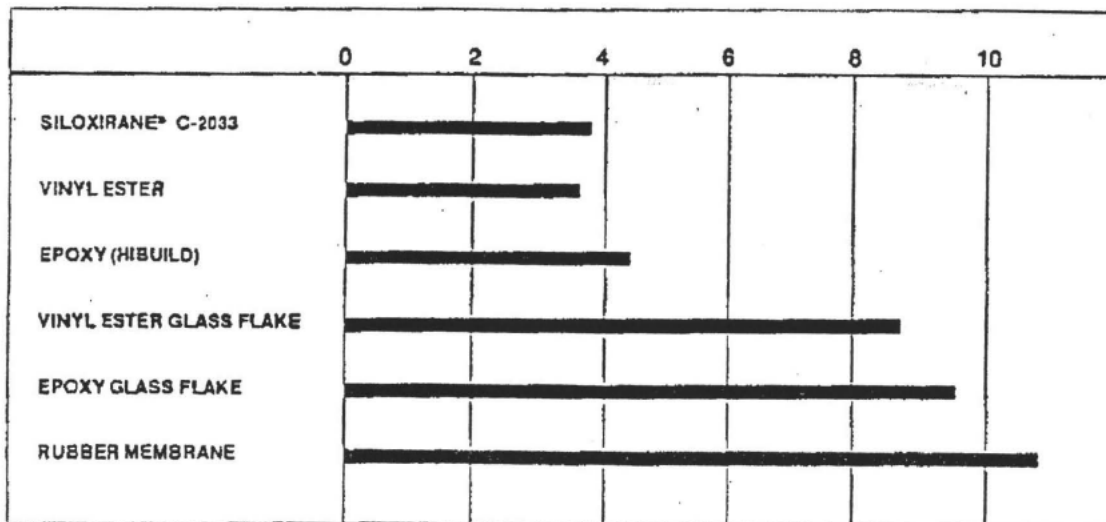
	Glacial Acetic Acid	Acetone	Ammonium Chloride	Ammonium Hydroxide	Benzene	Black Liquor (Paper)	Bromine Water	Carbon Tetrachloride	Chlorine Water	Chlorobenzene	Chromic Acid 30%	Dichlorobenzene	Dimethylformamide	Ethanol	Formaldehyde	Furfural Alcohol	Gasoline	Hydraulic Oil	Hydrochloric Acid 0.37%	Jet Fuel	Kerosene	Methanol	Methylene Chloride	MEK	MIBK	Monochloroacetic Acid	Nickel Plating	Nitric Acid 50%	Sodium Chloride	Sodium Hydroxide	Sulfite Liquor (Paper)	Sulfuric Acid 17%	Sulfuric Acid 0.70%	Toluene	Trichloroethylene	White Liquor (Paper)	
SILOXIRANE C-2033	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
VINYL ESTER	N	N	A	A	A	A	N	A	A	N	N	N	A	A	L	A	A	A	A	A	L	N	L	L	N	A	L	A	N	A	A	A	N	A	N	A	N
EPOXY (HIBUILD)	N	N	A	A	N	A	N	N	N	A	N	N	A	A	N	A	L	A	N	A	N	N	N	N	N	A	N	A	L	N	A	A	N	A	N	A	N
RUBBER	L	N	A	A	N	A	N	N	A	N	A	-	N	L	N	N	N	L	A	L	L	N	N	N	N	N	-	A	A	N	A	A	A	N	N	L	L

A = Good at ambient temperatures
L = Limited Service

N = Not recommended
- = No information

ECONOMY

Total Applied Cost per Square Foot



• Based on 4000 square foot area - 2 coat application on concrete surface.



ADVANCED
POLYMER SCIENCES, INC.

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TELEX 985504

FAX 216/937-5046

—SILOXIRANE®—C2033—

PHYSICAL PROPERTIES

• Tensile Strength (ASTM D638)	40°F	12,900 p.s.i.	• Hardness	75-78 Barcol
	75°F	11,340 p.s.i.		
• Flexural Strength		18,650 p.s.i.	• Permeability - Vapor Transmission of Water at 90°C for 7 Days	0.0000 gm per sq. ft. per 7 days per inch thickness
• Flexural Modulus (ASTM D790)		0.816 k.s.i.		
• Elongation	-40°F	5.09%	• Impact Resistance (ASTM D2794)	37 in/lbs
	75°F	4.38%		
• Water Absorption (ASTM D570)	(30 days in 88°C Water)	0.25%	• U.V. Light Resistance (ASTM G53)	40+ years

APPLICATION DATA

SURFACE PREPARATION

Sandblast with clear sand or grit to obtain an anchor pattern. All oils, soluble salts and loose concrete must be removed and the surface degreased. Concrete must have cured at least 30 days at 70°F.

MIXING INSTRUCTIONS

Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. (1) Thoroughly mix the contents of Part A with a power agitator until uniform consistency and color is obtained. Be sure that any solids that may have settled through storage have been put back in suspension. (2) Slowly combine the contents of the activator with the previously mixed Part A. (3) Thoroughly mix the two parts until a uniform consistency and color is obtained. (4) Use immediately due to short pot life.

LIMITATIONS

Apply in good weather when the air and surface temperatures are above 60°F. Surface temperatures must be at least 5° above the dew point. For optimum application properties, bring material to 70°-90°F prior to mixing and application. Increased temperatures will result in shorter pot life.

APPLICATION

Airless spray equipment with 30:1 pump ratio @ 80-100 lbs. to achieve 2400-3000 p.s.i. tip pressure. Reverse-A-Clean tip .019 to .023, with 3/8" fluid hose, 1/4" by 6' whip hose, with a maximum of 100 linear feet. This coating is a low VOC compliance material. If conditions require a viscosity adjustment, thin with MEK.

CLEAN UP SOLVENT

Acetone, MEK



ADVANCED
POLYMER SCIENCES, INC.

AVON, OHIO 44011 USA

800 334-7193

• TELEX 985504

• FAX 216/937-5046

—SILOXIRANE®— C2033—

**AMBIENT CURE PROTECTIVE LINING FOR CEMENT CONTAINMENT AREAS,
DIKES, FLOORS, PITS, ETC. HANDLING SOLVENTS, ACIDS, CAUSTICS**

APPLICATION DATA (cont.)

CURE TIME AND TEMPERATURE

Curing at Ambient Temperatures

The temperature should be at 60°F or above. Lining will lose tackiness and become hard in 2 to 4 hours, depending on the prevailing temperature. Full curing will occur in 2 to 7 days, depending on temperature. Allow second coat to dry 24 hours before walking or driving on it.

COVERAGE

Theoretical at recommended film thickness - 75 sq. ft. per gallon

Practical at recommended film thickness - 60-65 sq. ft. per gallon

HANDLING PRECAUTIONS

Solvents and chemicals are contained in this product. Consult the Material Safety Data Sheet for details. Adequate safety and health precautions should be taken during handling, application and drying of this product. This material should be applied under local, state and federal regulations and in accordance with OSHA and ANSI bulletins on safety requirements.

PACKAGING

3 Gallon Kit consists of:

3 gallons C2001 Resin

40 oz. C2033 Catalyst

The furnishing of the information contained herein does not constitute a representation by Advanced Polymer Sciences, Inc. that any product or process is free from patent infringement claims of any third party nor does it constitute the grant of a license under any patent of Advanced Polymer Sciences, Inc. or any third party. Advanced Polymer Sciences, Inc. assumes no liability for any infringement which may arise out of the use of the product. Advanced Polymer Sciences warrants that its products meet the specifications which it set for them. Advanced Polymer Sciences, Inc. **DISCLAIMS ALL OTHER WARRANTIES** relating to the products and **DISCLAIMS ALL WARRANTIES RELATING TO THEIR APPLICATION** expressed or implied **INCLUDING** but not limited to warranties of **MERCHANTABILITY AND FITNESS** for particular purpose. Receipt of products from Advanced Polymer Sciences, Inc. constitutes acceptance of the terms of the Warranty contrary provisions of purchases orders notwithstanding. In the event that Advanced Polymer Sciences, Inc. finds that products delivered are off-specification, Advanced Polymer Sciences, Inc. will, at its sole discretion, either replace the products or refund the purchase price thereof and Advanced Polymer Sciences, Inc. choice of one of these remedies shall be Buyer's sole remedy. Advanced Polymer Sciences, Inc. will under no circumstances be liable for consequential damages except insofar as liability is mandated by law. Advanced Polymer Sciences, Inc. will deliver products at agreed times insofar as it is reasonably able to do so, but Advanced Polymer Sciences, Inc. shall not be liable for failure to deliver on time when the failure is beyond its reasonable control.



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**AMBIENT CURE PROTECTIVE LINING FOR CEMENT CONTAINMENT AREAS,
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APPLICATION DATA (cont.)

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HANDLING PRECAUTIONS

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PACKAGING

3 Gallon Kit consists of:

3 gallons C2001 Resin

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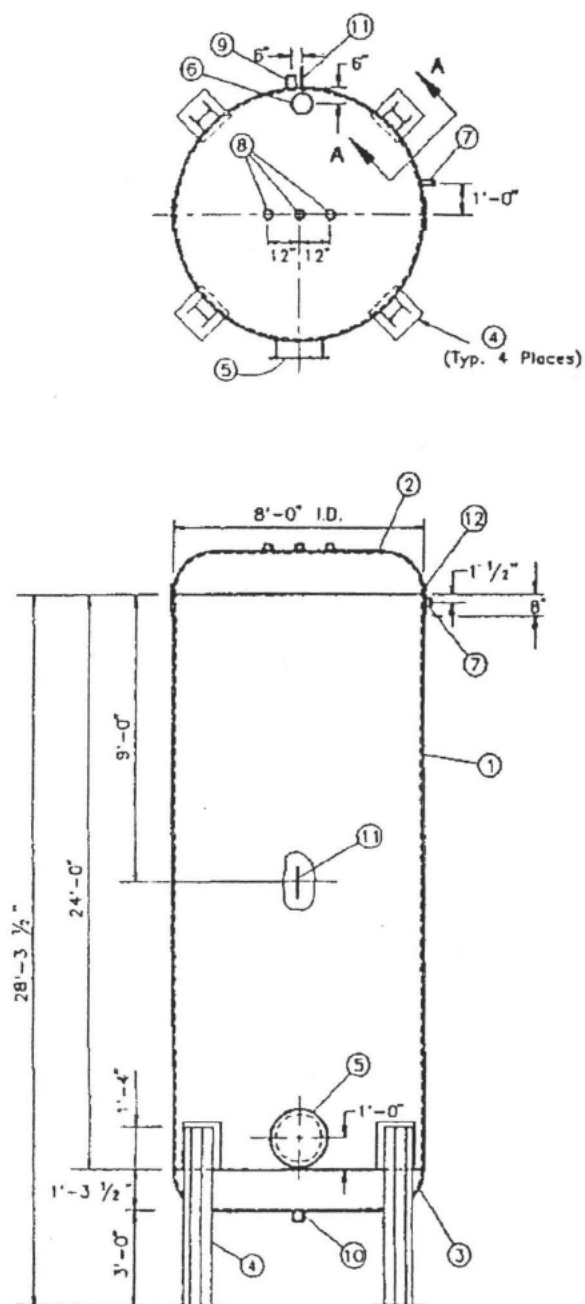
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• FAX 216/937-5046

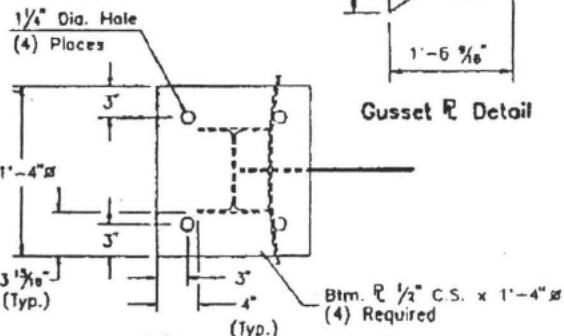
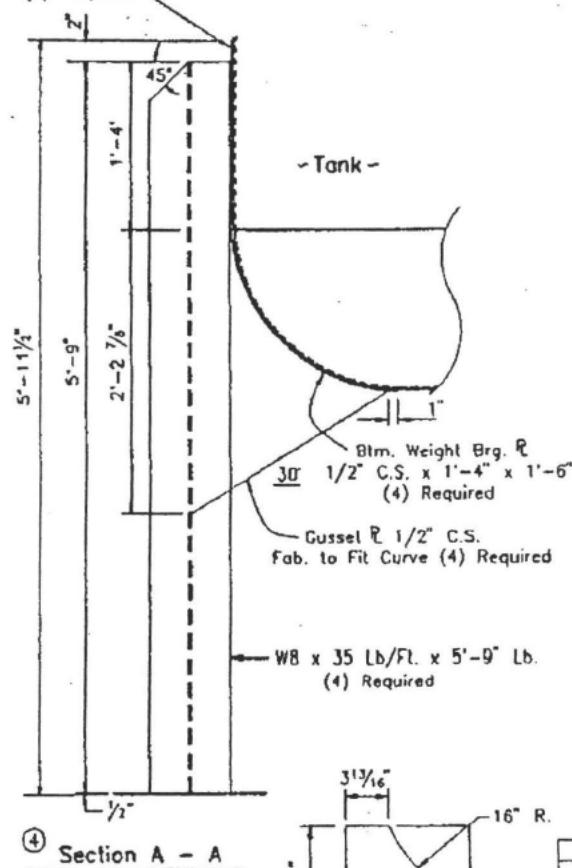
**Clean Harbors Kansas, LLC
RCRA Permit Application
Section E
Tank Systems
Appendix E-A - Tank System Assessments and Certifications**

**Appendix E-B
Tank Drawings**

**September 24, 2011
Revision No. 15**



Side Weight Brg. $\frac{1}{2}$ " C.S. x
1'-4" x 1'-6" (4) Required



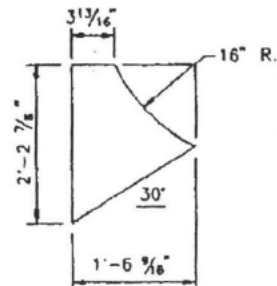
- Tank -

Blm. Weight Brg. $\frac{1}{2}$ " C.S. x 1'-4" x 1'-6" (4) Required

Gusset $\frac{1}{2}$ " C.S. Fab. to Fit Curve (4) Required

W8 x 35 Lb/Ft. x 5'-9" Lb. (4) Required

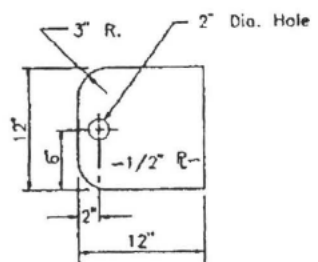
Section A - A



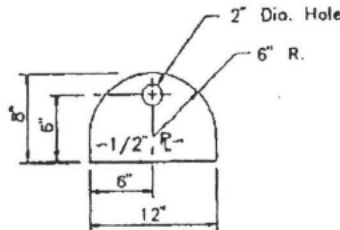
Gusset Detail

Specifications:

- 1.) Tank Blm. to be $\frac{1}{4}$ " C.S. & S.A.36
Sides to be $\frac{3}{16}$ " C.S.P.L. & S.A.36
Top to be $\frac{1}{4}$ " C.S. L.P. & S.A.36
- 2.) Primer w/1-coat Red Oxide & Paint w/1-coat Tank White
- 3.) Tank to be Built per API 620, Replacing API 620 Section #2 on Materials w/API 650 Appn. A
- 4.) PSIG Hydrotest
- 5.) PSIG Working Pressure



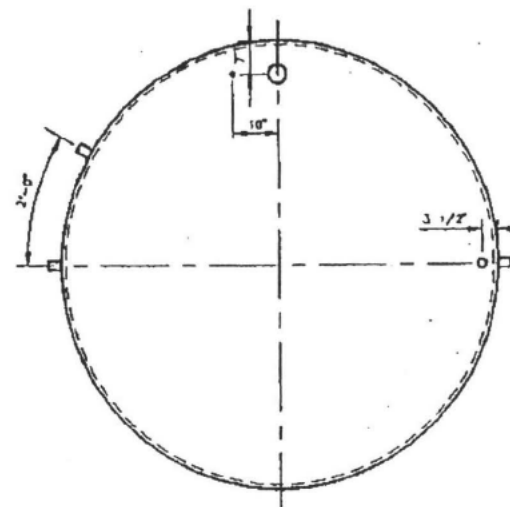
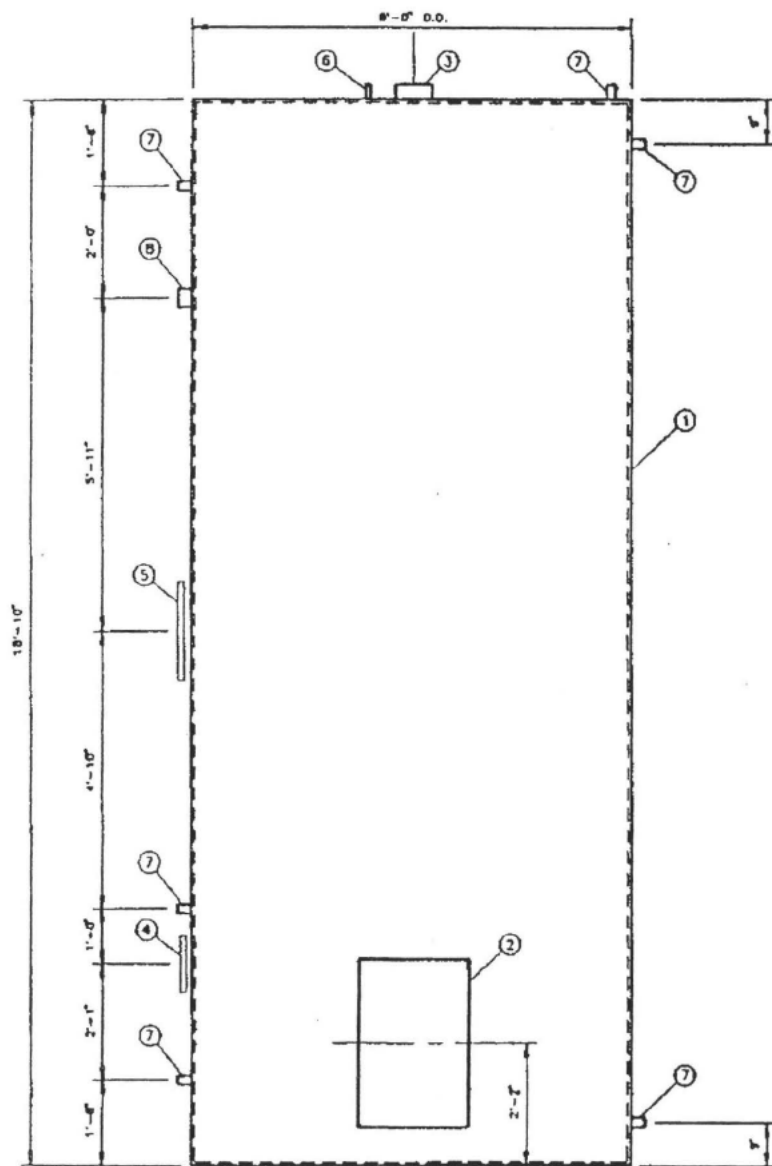
Top Crane Hook



Middle Crane Hook

Item	Qty.	Description
12	2	Top Crane Hooks - See Detail
11	1	Middle Crane Hook - See Detail
10	1	3" 3000 Lb. 1/2 Cplg.
9	1	2 1/2" 3000 Lb. 1/2 Cplg.
8	3	2" 3000 Lb. 1/2 Cplg.
7	1	1" 3000 Lb. 1/2 Cplg.
6	1	Sentinel Mfg. Co. #56 8" # Thel Malch
5	1	Clay & Bailey #1820 18" Dia. Manhole
4	4	Leg Assembly - See Details
3	1	1/4" Bottom Head 8'-0" I.D. S.A. 36
2	1	1/4" Top Head 8'-0" I.D. S.A. 36
1	1	3/16" Shell 8'-0" I.D. S.A. 36 24'-0" Long

HYDROCARBON RECYCLERS, INC.		
2549 N. NEW YORK AVE. WICHITA, KANSAS 67219		
Scale 3/8" = 1'-0"		Drawn by: ProDraft
Date: 1-20-82		
TANK: 7,363 GALLON MAXIMUM CAPACITY		
V-1, V-3, V-4, V-7 & V-8		50-11-001

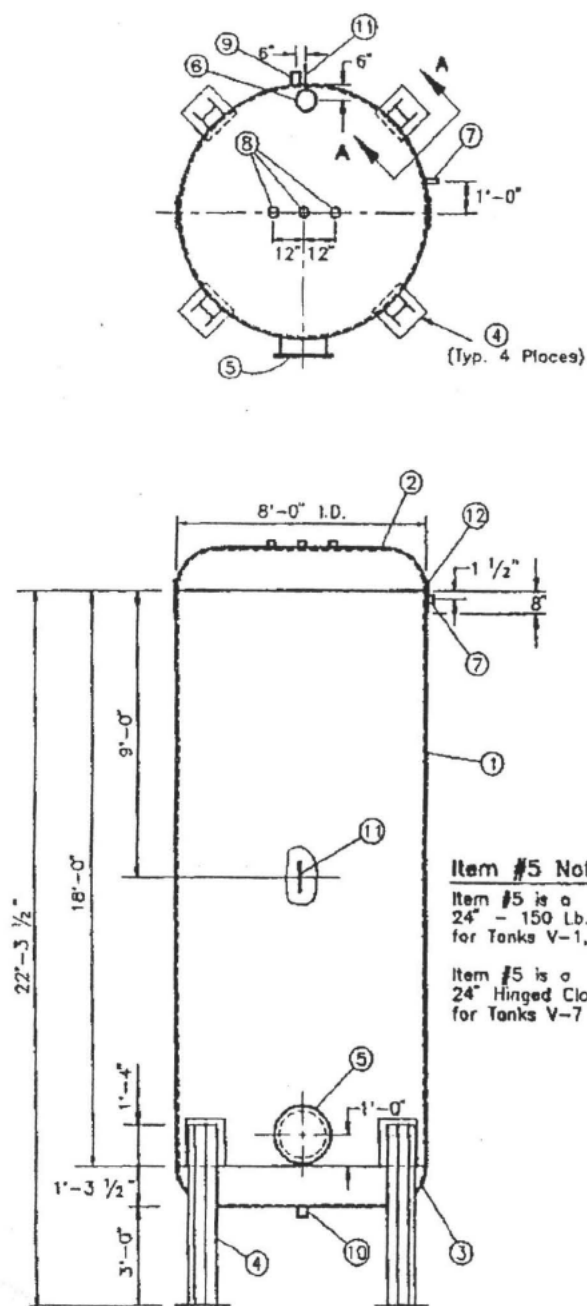


U.L. Number 165232

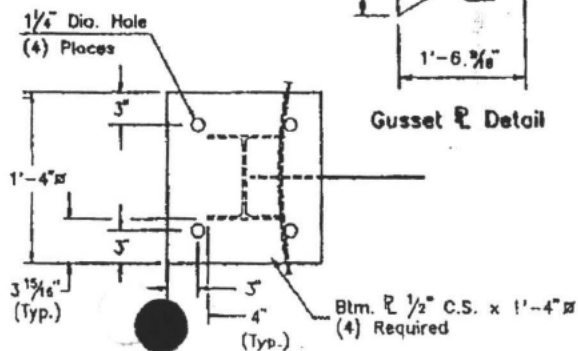
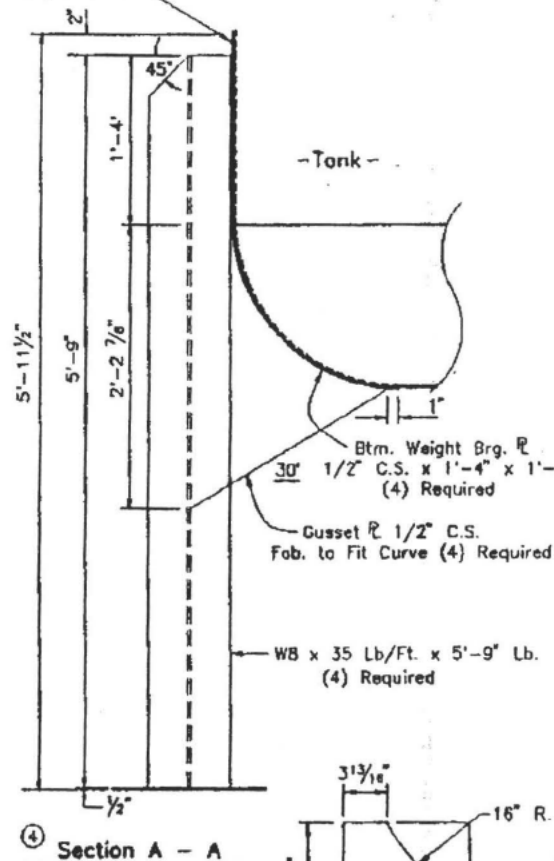
8	1	4" Coupling
7	5	2" Coupling
6	1	1" Coupling
5	1	18" 150# RF
4	1	10" 150# RF
3	1	8" Thief Hatch
2	1	2' X 3' Manway
1	1	3/16" Shell 8'-0" O.D., S.A. 36, 18'-10" Long
Item	Qty.	Description

HYDROCARBON RECYCLERS, INC.		
2549 N. NEW YORK AVE. WICHITA, KANSAS 67219		
Scale: 1/2" = 1'-0"	Drawn by: P. B. B. B.	
Date: 1-12-82		
TANK: 7,084 GALLON MAXIMUM CAPACITY		

V-2	50-56-1/2-001
-----	---------------

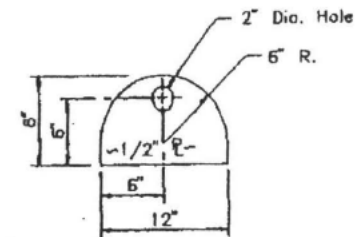
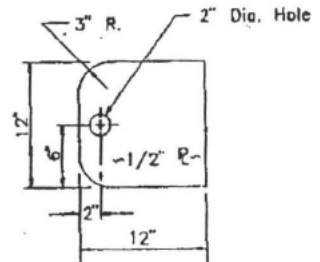


Side Weight Brg. $\frac{1}{2}$ " C.S. x
1'-4" x 1'-6" (4) Required



Specifications:

- 1.) Tank Blm. to be $\frac{1}{4}$ " C.S. & S.A.36
- 2.) Sides to be $\frac{3}{16}$ " C.S.P.I. & S.A.36
- 3.) Top to be $\frac{1}{4}$ " C.S. LP & S.A.36
- 4.) Primer w/1-coat Red Oxide & Paint w/1-coat Tank White
- 5.) Tank to be Built per API 620, Replacing API 620 Section #2 on Materials w/API 650 Appn. A
- 6.) PSIG Hydrotest
- 7.) PSIG Working Pressure



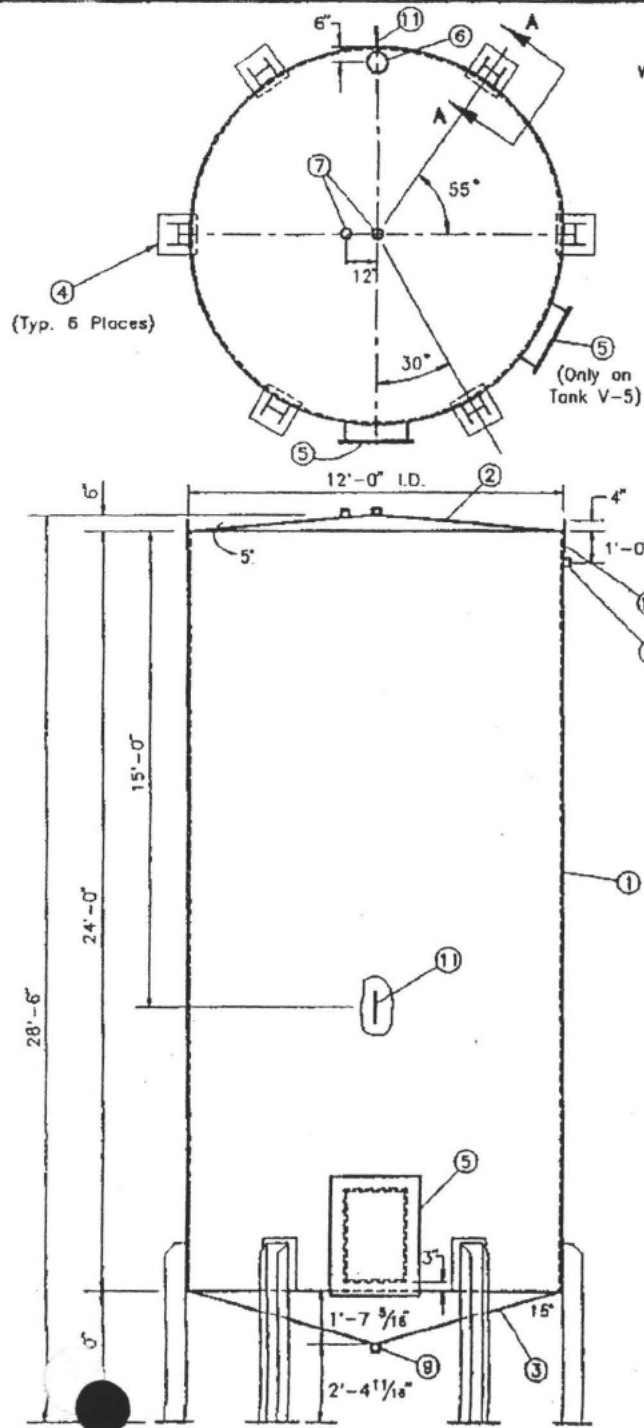
Item	Qty.	Description
12	2	Top Crane Hooks - See Detail
11	1	Middle Crane Hook - See Detail
10	1	3" 3000 Lb. 1/2 Cplg.
9	1	2 1/2" 3000 Lb. 1/2 Cplg.
8	3	2" 3000 Lb. 1/2 Cplg.
7	1	1" 3000 Lb. 1/2 Cplg.
6	1	Sentinel Mfg. Co. #56 8" Thief Hatch
5	1	See Item #5 Note
4	1	Leg Assembly - See Details
3	1	1/4" Bottom Head 8'-0" I.D. S.A. 36
2	1	1/4" Top Head 8'-0" I.D. S.A. 36
1	1	3/16" Shell 8'-0" I.D. S.A. 36 24'-0" Long

HYDROCARBON RECYCLERS, INC.
2549 N. NEW YORK AVE. WICHITA, KANSAS 67219

Scale: 3/8" = 1'-0"
Date: 7-7-82
Drawn by: ProDrill

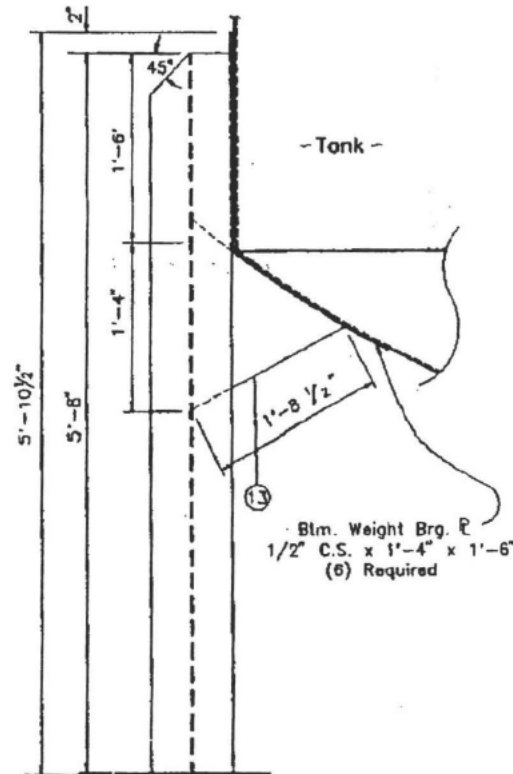
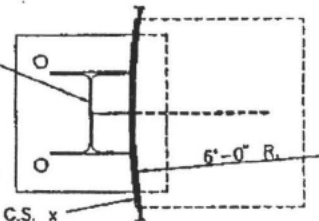
TANK: 7,363 GALLON MAXIMUM

V-1, V-3, V-4, V-7 & V-8



WB x 35 Lb/Ft. x 5'-8" Lb.
(6) Required

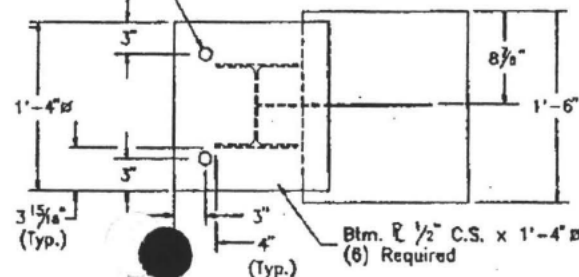
Side Weight Brg. $\frac{1}{2}$ " C.S. x
1'-4" x 1'-8" (6) Required



Blm. Weight Brg. $\frac{1}{2}$ "
1/2" C.S. x 1'-4" x 1'-6"
(6) Required

1/4" Dia. Hole
(2) Places

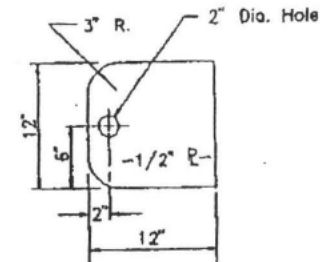
Section A - A
(Tank not shown in bottom view)



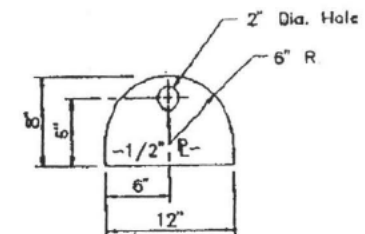
Blm. $\frac{1}{2}$ " C.S. x 1'-4" x
(6) Required

Specifications:

- 1.) Tank Blm. to be 5/16" C.S. & A36
Sides to be 1/4" C.S. & A36
Top to be 3/16" C.S. & A36
- 2.) Primer w/1-coat Red Oxide &
Paint w/1-coat Tank White
- 3.) Tank to be Built per API 620.
Replacing API 620 Section #2
on Materials w/API 650 Appn. A



12 Top Crane Hook



11 Middle Crane Hook

*2 Manways required on Tank V-5

Item	Qty.	Description
13	6	Gusset $\frac{1}{2}$ " C.S. 1'-4" x 1'-4" x 1'-8 1/2"
12	2	Top Crane Hooks - See Detail
11	1	Middle Crane Hook - See Detail
10	1	5' 3000 Lb. Full Cplg.
9	1	4' 3000 Lb. 1/2 Cplg.
8	1	5' 3000 Lb. 1/2 Cplg.
7	2	2' 3000 Lb. 1/2 Cplg.
6	1	Clay & Bailey #54 8" Thief Hatch
5	1(2)	3'-0" X 2'-0" Std. Manway w/Cover
4	6	Leg Assembly - See Details
3	1	5/16" Bottom Head 12'-0" I.D. A. 36
2	1	3/16" Top Head 12'-0" I.D. A. 36
1	1	1/4" Shell 12'-0" I.D. A. 36 24'-0" Long

HYDROCARBON RECYCLERS, INC.

2549 N. NEW YORK AVE. WICHITA, KANSAS 67210

Scale: 3/8" = 1'-0"

Date: 2-7-83

Drawn by: P. H. H. H.

TANK: 20,895 GALLON MAXIMUM

V-5 & U-R

**Clean Harbors Kansas, LLC
RCRA Permit Application
Section E
Tank Systems
Appendix E-C - Documentation of Tank Ages**

**Appendix E-C
Documentation of Tank Ages**

**September 24, 2011
Revision No. 15**

**Clean Harbors Kansas, LLC
RCRA Permit Application
Section E
Tank Systems
Appendix E-C - Documentation of Tank Ages**

APPENDIX E-C

YEAR OF INSTALLATION OF HAZARDOUS WASTE TANKS

<u>VESSEL</u>	<u>YEAR INSTALLED</u>
V-1	1988
V-2	1982
V-3	1988
V-4	1988
V-5	1988
V-6	1988
V-7	1988
V-8	1988

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F-2b Specific Process Inspection Requirements:4

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F-1b(2) Tank and Tank Systems Inspection.....5

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**Clean Harbors Kansas, LLC
RCRA Permit Application
Section F
Inspection Plan**

List of Appendices

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Appendix F-B, Example Corrective Action Record
Appendix F-C, General Inspection Schedule
Appendix F-D, Inspection Schedule for Containers
Appendix F-E, Inspection Schedule for Tanks
Appendix F-F Inspection Schedule for Pumps and Ancillary Equipment

Acronym Table

Clean Harbors Kansas, LLC (CHK)
Remedial Work Order (RWO)
Inspection Work Ticket (IWT)
Emergency Response Coordinator (ERC)
Container Management Unit (CMU)

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RCRA Permit Application
Section F
Inspection Plan**

F-1 Introduction:

Clean Harbors Kansas, LLC (CHK) has developed this Inspection Plan in compliance with 40 CFR 264.15 and 270.14; changes to the inspection plan will be made in accordance with permit modification procedures found in 40 CFR 270.42. It is intended to provide a systematic method of identifying potential problems, malfunctions, or deterioration that may cause or lead to a release of hazardous constituents to the environment or a threat to human health.

Inspections will be used to identify potential operational problems, and to identify required maintenance of in-service equipment and structures while the facility is operational or equipment is in service. The corrective action program will include a Corrective Action Management System (CMS), which could include either paper Remedial Work Orders (RWO) or electronic Inspection Work Tickets (IWT), to document and track the resolution of problems identified during inspections.

One or more inspectors will be designated to perform the inspections as scheduled. A record of the inspections and the schedule will be maintained at the facility. The results of the inspections will be recorded on an Inspection Log that will be maintained in the operating record. As an alternative to maintaining a paper log system as has been historically used by the facility, the inspection results may be maintained in an Electronic Inspection Management

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Section F
Inspection Plan

System developed by Clean Harbors. The Inspection Log, either in the paper or electronic format, will include the date, the time of the inspection, the name of the inspector, his/her initials, items examined, problems noted, and the identifying number of each RWO/IWT issued to address any problem noted. The nature and date of any repairs are recorded on the RWO/IWT when the repairs are completed. The RWO/IWT is then filed by identifying number in the operating record as a paper form or as a data record in the Electronic Inspection Management System.

Potential problems identified on the inspection log will be corrected or addressed as soon as possible or practicable. If repairs are required, they will be made as soon as they can be safely and practically performed. If the problem identified is a threat to human health or the environment, then actions to mitigate the situation will be undertaken immediately. All steps necessary to allow the repairs (e.g., minimizing the exposure of the workers to hazardous materials, hazardous waste, or hazardous situations) will be taken prior to beginning the repair work. The inspection logs and RWOs/IWTs will be maintained as part of the operating record for at least three years from the date of inspection. Examples of the inspection log in both paper and electronic format are provided in Appendix F-A, Example of Inspection Log. The electronic form has a different appearance than the paper form due to the manner in which the data is captured by the Inspection Management System database. Inspectors will conduct their inspections using the electronic system in the same manner as they would using the paper form and will review each area for the elements that are described in Attachments F-C and F-D.

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Section F
Inspection Plan

The items being inspected are in line with permit requirements. The appearance of the Inspections forms however maybe modified with a permit Modification.

Examples of the paper RWO and the electronic IWT are provided in Appendix F-B, Example of Corrective Action Records.

The facility inspector will communicate the occurrence of problems to the Operations Manager (or designee) through the RWOs/IWTs. The timing of this notification will depend on the nature of the potential problem. A problem threatening human health or the environment would be reported immediately. If necessary, the inspector will notify the Emergency Response Coordinator (ERC) as required by Section H, Contingency/Emergency Plan.

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**Clean Harbors Kansas, LLC
RCRA Permit Application
Section F
Inspection Plan**

F-2 Inspection Requirements:

F-2a General Inspection Requirements: 40 CFR 264.15(a) and (b), 264.33, 270.14(b)(5)

Appendix F-C, General Inspection Schedule, will include inspection of the facility perimeter, safety and emergency equipment, security devices, operating and structural equipment, general requirements of miscellaneous units, communication systems, alarm systems, fire protection equipment, and decontamination equipment.

**F-2b Specific Process Inspection Requirements: 40 CFR 264.15(b)(4),
270.14(b)(5)**

Specific inspection schedules for container, tank systems, and miscellaneous units are provided in Appendix F-D, Inspection Schedule for Containers.

F-2b(1) Container/ Container Management Unit Inspection: 40 CFR 264.174

The Container Management Unit (CMU)s will be inspected for adequate aisle space, potential spills or accumulation of liquids into secondary containment systems and loading or unloading areas, and deterioration of secondary containment area structures.

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Section F
Inspection Plan**

The containers will be visually inspected in accordance with Section C, Waste Characterization, for their condition (e.g., open, deteriorated, damaged, corroded, leaking, bulging such as may be caused by internal pressure build-up, etc.), and identification markings.

Refer to Section D, Use and Management of Containers, for a description of the CMUs. The inspection schedule for containers and container management units at the facility is presented in Appendix F-D, Inspection Schedule for Containers.

F-1b (2) Tank and Tank Systems Inspection 40 CFR 264.193(i), 264.195

The items addressed by tank systems inspections include tanks, ancillary equipment, secondary containment systems, and areas surrounding tank systems, tank overfilling control equipment, and other control or monitoring equipment. For example

The visible portions of the construction material of the tanks and their ancillary systems will be inspected for evidence of corrosion, deterioration, or erosion which could result in a leaking or unfit-for-use tank or tank system.

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The area immediately surrounding all tank systems including areas within the secondary containment systems will be inspected for obvious signs of deterioration, accumulated liquids, or potential releases of hazardous waste.

Loading and unloading areas are inspected for obvious sign of deterioration, accumulated liquids, or potential releases of hazardous waste.

Tank overfilling control and monitoring equipment is inspected visually or (periodically) for mechanical operation.

The leak detection systems for the tanks are inspected for evidence of leakage, deterioration, or malfunction.

A list of the tanks and a description of the tank systems is provided in Section E, Tank Systems. Each of the tanks listed in Section E will be inspected for the applicable items listed above, according to Appendix F-E, Inspection Schedule for Tank Systems. Tank condition is assessed annually.

F-3 Inspection Schedule: 40 CFR 264.15, 270.14(b)(5)

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Inspection Plan**

The inspection schedules presented in Appendices F-C through F-F indicate the inspection frequency for each item on the schedule. Inspection frequencies may range from daily to annually, depending upon the item. The frequencies have been based on the rate of probable deterioration of equipment, equipment manufacturers' recommendations, and operating experience at other Clean Harbors facilities. For example, areas within the facility subject to spills, such as truck loading and unloading areas, will be inspected daily when in use. The Inspection must be completed during treatment if treatment is taking place on that operating day.

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**Clean Harbors Kansas, LLC
RCRA Permit Application
Section F - Inspection Plan
Appendix F-A - Sample Inspection Log**

APPENDIX F-A

EXAMPLE INSPECTION LOG

**May 30, 2011
Revision No. 14**



CONTAINER STORAGE AREA INSPECTION FORM

FormCode COCMPFRM03

Full Name: 	Date: 5/7/2008				
Location: Bldg xxxx	Military Time: 				
Instructions: Note condition of inspection items. If item does not apply to an area, mark N/A. All unsatisfactory findings must be explained below. Include any repairs, changes or other remedial actions required or performed.					
INSPECTION ITEM	YES	NO	N/A	REASON FOR FAILURE	WORK TICKET STAT
Container Placement and Stacking	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Sealing of Containers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Labeling of Containers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Containers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Pallets	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Doors (indoor area)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Base / Foundation / Roof	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Berms / Racks	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Debris and Refuse	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Warning Signs	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		

Aisle Space	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Loading and Unloading Areas	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Sumps	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Alarm and Communication System	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Storage Capacity	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Bonding / Grounding	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Pumps	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Inventory Age	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
On-Demand Work Ticket (please describe reason below)					
Select Overall Assessment of Inspection Results	<input type="text" value="Pass"/>				

Submit

Supervisor's Signature _____



SAFETY & SECURITY INSPECTION FORM

FormCode COCMPFRM01

Full Name: 	Date: 5/7/2008
---	--

Location: Wichita	Military Time:
---	---

Instructions: Note condition of inspection items. If item does not apply to an area, mark N/A. All unsatisfactory findings must be explained below. Include any repairs, changes or other remedial actions required or performed.

INSPECTION ITEM	YES	NO	N/A	REASON FOR FAILURE	WORK TICKET STAT
Perimeter Fences	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Gates	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Warning Signs	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Exit Signs	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Exits / Firelanes / Evacuation Routes Clear?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Lighting System	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Emergency Lighting System	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Accessibility of Safety Equipment/Protective Gear (helmets, faceshields, goggles, boots, gloves, clothing, duct tape, ab. pads)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Adequate Supply of Safety Equipment/Protective Gear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Condition of Safety Equipment/Protective Gear	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		

Breathing Apparatus Accessibility	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Breathing Apparatus Adequate Supply/Full Charge	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Breathing Apparatus Condition	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
First Aid Kits	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Blood Borne Pathogen Kits	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Emergency Eyewashes	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Emergency Showers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Internal/External Communications (Phones/Radios)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Fire Extinguishers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Absorbent Supply	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Recovery Drum Supply	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Respirators and Cartridges	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Fire Suppression System (monitors, pull stations, alarms) Accessibility	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Fire Suppression System Operable?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		

Water Lines / Hydrants	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Alarm Systems	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Fire Blankets	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Strainers on Fire Suppression System	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Surveillance System/Guard Service	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Supplied Air Delivery System and Reserve	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Wind Sock	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Decontamination Equipment	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Portable Sump Pumps	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Gasoline Pumps	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Loud Speakers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Chocked Wheels on Parked Vehicles	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Cylinders Secure	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Ventilation Operable	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		

Fall Protection	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Electrical Boxes	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Emergency Contact Info Posted	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Hearing Protection Available	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Housekeeping	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Portable Compressor	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Lime Supply	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
QC Lab Hood	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Rolloff Parking Area	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Dumpster / Outside Containers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Stormwater Collection System	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Rally Point	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Visitors Log	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Contingency Plan	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		

Wind Instrument	<input checked="checked" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
<div></div>					
On-Demand Work Ticket (please describe reason below)					
<div></div>					
Select Overall Assessment of Inspection Results	<div>Pass</div>				

Submit

Supervisor's Signature _____

**Clean Harbors Kansas, LLC
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Appendix F-B - Sample Remedial Work Order**

APPENDIX F-B

EXAMPLE CORRECTIVE ACTION RECORDS

Forms May be Modified

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Appendix F-C - General Facility Inspection schedule**

APPENDIX F-C

GENERAL FACILITY INSPECTION SCHEDULE

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Appendix F-C - General Facility Inspection schedule

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
General Facility and Perimeter	Visually check fences and gates for breaks or damage.	Monthly
	Visually check warning signs for clear visibility.	Monthly
	Visually check for erosion under fences.	Monthly
	Visually check access and intra-facility roads for spills.	Daily
	Visually check for vegetation obscuring warning signs along the fence.	Monthly
Safety and Emergency Equipment	Inspect tags of fire extinguishers for expiration dates and adequate pressure.	Monthly
	Test telephones for proper operation.	Monthly
	Test alarms for proper operation.	Monthly
	Test paging and loudspeaker systems for proper operation.	Monthly
	Inspect self-contained breathing apparatus (SCBA) for air pressure with a pressure gauge. Inspect regulators to verify that air passage is unobstructed. Visually check masks and hoses for serviceability.	Monthly

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INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
	Inspect first aid stations.	Monthly
	Inspect fire hydrants for adequate water supply, and leaks or evidence of corrosion.	Annually
	Visually inspect sprinkler systems and other fire suppression systems.	Monthly
	Inspect external condition of safety showers and operate to verify adequate water flow.	Monthly
	Inspect external condition of eye wash stations and operate to verify adequate water flow.	Monthly
	Inspect spill response and decontamination equipment for operable condition. Spill response equipment includes the following:	Monthly
	Overpack drums	
	Absorbents	
	Portable pumps	
	Hand tools	
	Brooms	
	Detergent	
	Absorbent towels	
	Inspect inventory of Facility PPE for adequate supplies and operable condition. PPE includes the following:	Monthly
	Cartridge respirators	
	Supplied air respirators	

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Appendix F-D - Container, CMU Inspection Schedule

APPENDIX F-D

INSPECTION SCHEDULE FOR CONTAINERS

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Appendix F-D - Container, CMU Inspection Schedule

This schedule applies to active Container Management Units (CMUs) at CHK, except as noted.

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
Container Management System	Inspect containment system loading and unloading areas for evidence of spills or accumulated liquids.	Daily
	Inspect aisles in container storage areas for a minimum of two (2) feet of aisle space.	Daily
	Visually inspect containers for evidence of pressure build-up, structural damage, leaks, missing cap or bung, corrosion, or deterioration.	Weekly
	Visually inspect containers for legible markings or identification labels.	Weekly
	Inspect the container storage areas, concrete slab, and curbs for cracks, gaps, flaking, chips, gouges, and other signs of wear.	Daily
	Inspect sumps for presence of liquids.	Daily
	Inspect container management areas to ensure incompatible wastes are properly segregated.	Weekly
	Inspect equipment and conveyors for operability, condition.	Weekly

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Appendix F-E - Tank Inspection Schedule

APPENDIX F-E

INSPECTION SCHEDULE FOR Tanks

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Appendix F-E - Tank Inspection Schedule

This schedule applies to active tanks at CHK, except as noted.

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
Tanks systems	Inspect containment system for evidence of spills or accumulated liquids.	Daily
	Visually inspect tanks for evidence of pressure build-up, structural damage, leaks ,corrosion, or deterioration.	Daily
	Visually inspect tanks for legible markings or identification labels.	Daily
	Inspect sumps for presence of liquids.	Daily
	Inspect overfill alarm equipment	Daily
	Inspect Tank Cathodic protection	Annually
	Inspect equipment and conveyors for operability, condition.	Weekly

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Section F - Inspection Plan

Appendix F-F - INSPECTION SCHEDULE FOR Air Emissions

APPENDIX F-F

INSPECTION SCHEDULE FOR AIR EMISSIONS

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Appendix F-F - Tank Inspection Schedule

This schedule applies to Pumps and Ancillary Equipment at CHK, except as noted.

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
Pumps and Ancillary Equipment	Monitor for volatile air emissions as required	Monthly and Annually
	Visually monitor as required for evidence of leaks	Daily when in use

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List of Referenced Drawings

Drawings located in Section Y, Referenced Drawings

Drawing G-1 Facility Layout

List of Acronyms

Clean Harbors Kansas, LLC (CHK)
Public Address (PA)
Hazardous Waste Management Unit (HWMU)
Container Management Unit (CMU)
Personal Protective Equipment (PPE)
Self-Contained Breathing Apparatus (SCBA)
National Fire Protection association (NFPA)

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G-1 Introduction

Waste management processes at Clean Harbors Kansas, LLC (CHK) are designed with safety features for protection of human health, the environment, and the general public. This section is a description of the measures used to prevent hazards during waste management at the facility. The hazardous waste units at the facility include container management units, and loading and unloading facilities.

G-2 Security: 40 CFR 264.14, 270.14(b)(4)

The CHK facility will be secured to prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, and to protect human health and the environment.

G-2a Waiver 40 CFR 264.14, 270.14(b)(4)

The CHK facility is not claiming the waiver of the security procedure and equipment requirements of 40 CFR 264.14.

G-2a(1) Injury to Intruder 40 CFR 264.14, 270.14(b)(4)

The CHK facility is equipped with numerous systems to minimize the possibility of intentional

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entry of the facility by intruders. These systems include conventional equipment such as fencing, locked gates, and warning signs but may also include electronic security systems. In order to prevent a possible intruder from coming in contact with the waste being managed at the facility, containers will be kept closed at all times except when physically adding, removing or sampling waste and will be stored within closed buildings. Containers of waste are typically closed with bung wrenches or chime ring bolt wrenches. These devices make it very difficult to open by hand, without special tools. Trailer trucks used to hold waste during the course of transportation that are parked at the facility will be kept locked while on facility grounds. These methods of securing the waste stored at the facility will minimize the possibility that an intruder will be injured through contact with the waste.

G-2a(2) Violation Caused by Intruder 40 CFR 264.14, 270.14(b)(4)

As discussed in the sections above and below, the facility security devices and container closure devices make it difficult for an intruder to come in contact with the waste and therefore potentially causing a permit violation. Should the intruder use extraordinary measures to open a container or cause damage to the container, the secondary containment in which drums are stored would prevent any potentially released waste from escaping from the facility and cause a permit or regulatory violation.

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G-2b Security Procedures and Equipment:

The CHK facility will be secured to prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, to protect human health and the environment. (The active portion of the facility, hereinafter referred to in this section as "the facility," is as defined by 40 CFR 261.10.) This will be accomplished by provisions such as, fencing, gates, an electronically controlled security system, and warning signs. Presence of facility personnel during shift operations will minimize or prevent incidents of trespassing and vandalism. Fencing is not provided where buildings and building entrances provide a barrier to unauthorized entry. In addition,

employees are instructed to question and direct unauthorized visitors to the office should they try to enter the facility. These security provisions are further discussed below.

- Fence: where required for security, the facility is surrounded by a six (6) foot high chain link fence with gates at various locations. Figure G.1, Facility Layout gives the location of fencing and gates. Entry into the facility will be controlled by the fencing, gates, and buildings. Gates and doors which allow access to the facility are to remain closed and secured against entry unless in use. Personnel and vehicle access will be

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controlled by an electronic system or by designated facility personnel.

- **Vehicle Access:** Vehicles must be authorized to enter the facility. Normal vehicle access is through the main entrance; this entrance is provided with electronic controls. However, when attended by facility personnel, other gates may be used with prior authorization. These secondary gates may also be used while evacuating the facility. In the event of a failure or scheduled shutdown of the electronic gate system, the main entrance gate will be operated manually. The operation of the secondary gates will not be affected by a power failure, since these gates will not be electronically controlled.
- **Personnel Access:** These procedures are designed to control unauthorized entry into the facility. Access into the facility will be controlled by the fencing, gates, buildings, and facility personnel. Non-employee personnel including contractors, consultants, governmental agency personnel and visitors will be required to sign in prior to being granted entry into the facility. Entry to the facility will be monitored by facility personnel.
- **Warning signs:** Warning signs will be posted on or adjacent to all gates. The signs, written in English, will state at a minimum, "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT." The lettering on warning signs will be at least two (2)

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inches high to be legible from a distance of twenty-five (25) feet. The lettering and the sign background will be contrasting colors. Warning signs will also be placed along the fence and, where appropriate, along building exterior walls so as to be seen from any approach to the facility.

- Signs are posted inside the facility to warn personnel about potential hazards. These signs may be required, for example, by OSHA regulations (e.g., NO SMOKING, EYE PROTECTION REQUIRED, HEARING PROTECTION REQUIRED, DANGER - HIGH VOLTAGE, etc.). The signs will be located as appropriate.

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G-3 Inspection Schedule: 40 CFR 264.15, 264.33, 264.174, 270.14(b)(5)

CHK has developed an Inspection Plan to provide a systematic method of identifying potential problems, malfunctions, or deterioration which may cause or lead to a release of hazardous constituents to the environment or a threat to human health. The facility inspection plan, including inspection schedules, is presented in Section F, Inspection Plan.

G-3a Types of Problems 40 CFR 270.14(b)(5), 264.15(b)(3)

The Inspection Schedule and inspection checklists provided in Section F of this permit application indicate the types of problems that the inspector will be looking for during the inspections conducted of each area used to manage hazardous waste.

G-3b Schedule of Remedial Actions 40 CFR 270.14(b)(5), 264.15(c)

Potential problems identified on the inspection log will be corrected or addressed as soon as possible or practicable. If repairs are required, they will be made as soon as they can be safely and practically performed. If the problem identified is a threat to human health or the environment, then actions to mitigate the situation will be undertaken immediately. All steps

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G-3 Inspection Schedule: 40 CFR 264.15, 264.33, 264.174, 270.14(b)(5)

CHK has developed an Inspection Plan to provide a systematic method of identifying potential problems, malfunctions, or deterioration which may cause or lead to a release of hazardous constituents to the environment or a threat to human health. The facility inspection plan, including inspection schedules, is presented in Section F, Inspection Plan.

G-3a Types of Problems 40 CFR 270.14(b)(5), 264.15(b)(3)

The Inspection Schedule and inspection checklists provided in Section F of this permit application indicate the types of problems that the inspector will be looking for during the inspections conducted of each area used to manage hazardous waste.

G-3b Schedule of Remedial Actions 40 CFR 270.14(b)(5), 264.15(c)

Potential problems identified on the inspection log will be corrected or addressed as soon as possible or practicable. If repairs are required, they will be made as soon as they can be safely and practically performed. If the problem identified is a threat to human health or the environment, then actions to mitigate the situation will be undertaken immediately. All steps

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necessary to allow the repairs (e.g., minimizing the exposure of the workers to hazardous materials, hazardous waste, or hazardous situations) will be taken prior to beginning the repair work.

G-3c Inspection Log 40 CFR 270.14(b)(5), 264.15(d)

Copies of the paper and electronic Inspection Logs are provided in Appendix G-A. Copies of these documents are also maintained in Section F of this permit application.

G-4 Preparedness and Prevention Requirements: 40 CFR 270.14(b)(6)

CHK is operated and maintained to minimize the possibility of hazards such as fire, explosion, or unplanned release of hazardous waste, etc. to air, soil, or surface water which may threaten human health or the environment. The inspection schedule for facility safety and emergency equipment is provided in Section F, Inspection Plan.

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G-4a Equipment Requirements: 40 CFR 264.32

G-4a(1) Internal Communications: 40 CFR 264.32(a)

Communications inside CHK can be achieved through a telephone system and a Public Address (PA) system. Telephones will be located so that employees will have access to a phone. An employee will be able to call any other telephone in the facility, and can access the PA system for paging. The paging system will broadcast through a series of loudspeakers. Two way communication devices or paired work crews (i.e., the buddy system) will ensure that every employee has immediate access to communication in the event of an emergency. The internal communication system will be tested monthly, as indicated in the Inspection Plan, Section F. However, use of the internal communication system during the course of normal operations will more quickly identify developing problems.

An alarm system will alert personnel to major emergencies. Alarms will consist of a siren (activated at manual pull stations) or a broadcast over the paging system loudspeakers (activated by dialing the appropriate code at any telephone). Emergency telephone numbers and instructions are posted at or nearby every telephone in the active portion of the facility; emergency telephone numbers are also available in office areas.

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G-4a(2) External Communications: 40 CFR 264.32(b)

External facility communications will be available through the local telephone company. Local (Wichita) or long distance telephone connections are available. Arrangements for emergency response have been made with appropriate outside agencies; see the Contingency/Emergency Plan, Section H.

G-4a(3) Emergency Equipment: 40 CFR 264.32(c)

Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment will be available at the facility. Descriptions, locations, and a list of emergency equipment for the facility are provided in Section H, Contingency Plan. Emergency equipment is inspected for availability and readiness according to the schedule given in Section F, Inspection Plan.

G-4a(4) Water for Fire Control: 40 CFR 264.32(d)

The facility has a supply of water available for fire fighting. Water for fire protection is supplied by a water main that is part of the City of Wichita public water system. Hazardous Waste Management Units (HWMU) are provided with appropriate fire protection systems meeting the applicable requirements of the City Building Code and NFPA. These systems are

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